

**SMITTIA LASIOPS (MALLOCH): A REDESCRIPTION OF THE
ADULTS WITH A DESCRIPTION OF THE IMMATURE STAGES
(DIPTERA: CHIRONOMIDAE)**

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Abstract.—The adults of *Smittia lasiops* (Malloch) are redescribed, with a description of the immature stages. The terrestrial nature of the immature stages is discussed.

Malloch (1915) described the adults of *Smittia lasiops* (as *Camptocladus lasiops*) from adults collected around garbage at a home in Urbana, Illinois. The place of occurrence of the adults indicated to Malloch that the larva was terrestrial. During an investigation of the bionomics of the northern and western corn rootworms by the Section of Economic Entomology, Illinois Natural History Survey, numerous larvae of a terrestrial chironomid were collected from soil samples taken in an experimental corn plot on the University of Illinois South Farm area at the south edge of Urbana. Soil samples collected for egg counts of corn rootworms had been washed and separated using an apparatus (Shaw et al., 1976) that would process a pint of soil in 3-4 minutes. Using this apparatus, I recovered numerous live chironomid larvae from subsequent soil samples taken in the experimental corn plots. Larvae were also collected on the roots of corn plants, although there was no evidence of damage to the roots. Several larvae were reared, and I identified the adults as *Smittia lasiops*.

Malloch's description of the male and female of *Smittia lasiops* was very general. Sublette (1967, 1970) added to the description of *Smittia lasiops* in his review of the type-specimens of the Chironomidae in the collections of the Illinois Natural History Survey and the Canadian National Collection. In his examination of the lectotype male (Frison, 1927), lectoallotype, and paratypes at the Illinois Natural History Survey, Sublette mounted only the male terminalia on slides, and based the remainder of his description on pinned material. In my examination of slide material of the reared adults and a slide preparation of the lectotype, I found some variation from Sublette's description, in addition to certain undescribed features of the adults.

With the discovery of the immature stages, the determination of their terrestrial nature, and because of the incomplete earlier description of the adults, I feel it is appropriate to redescribe the adults and to describe the immature stages. No comparison is made at this time between other eastern species of *Smittia*.

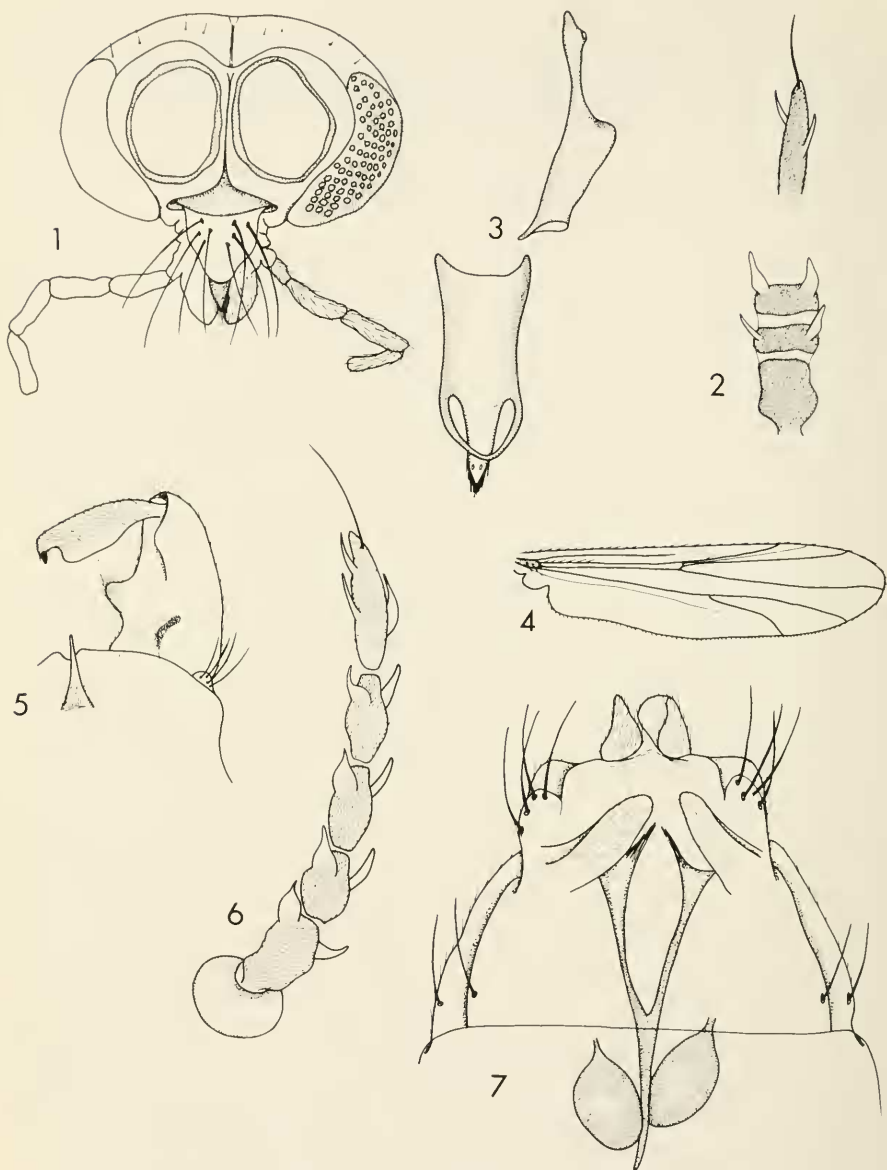
The terminology and abbreviations follow that of Saether (1980). All measurements are given in millimeters, with the range and mean.

Smittia lasiops (Malloch)

Male.—Length 2.17–2.51, 2.41 \pm 0.10 ($N = 10$). Head (Fig. 1) dark brown, expanded laterally. Eyes dark brown; dichoptic; facets of equal size; covered with short fine setae; dorsal separation between eyes 1.63 \times ventral distance. Coronal triangle reduced, narrowed anteriorly, 1.1–1.7, 1.4 \times longer than wide; coronal setae absent. Antenna dark brown; scape flattened, ring-shaped, 1.2–1.4, 1.3 \times longer than wide; pedicel globose, macrosetae absent, 1.4–2.2, 1.9 \times wider than long; flagellomeres plumose, flagellomeres 2, 3, and 13 (Fig. 2) with 2 flat hyaline lateral blades, flagellomere 13 with distinct apical seta, flagellomere lengths: 0.048–0.054, 0.052; 0.018–0.024, 0.021; 0.021–0.027, 0.024; 0.018–0.024, 0.021; 0.018–0.024, 0.020; 0.018–0.024, 0.020; 0.018–0.024, 0.020; 0.018–0.024, 0.021; 0.021–0.024, 0.022; 0.018–0.024, 0.022; 0.021–0.024, 0.022; 0.540–0.600, 0.578; AR 1.87–2.16, 2.03. Clypeus dark brown, broad, ventral $\frac{1}{3}$ tapered to broad point; clypeal setae 6–8, 7, dark brown, elongate. Maxillary palps membranous, pale brown, cylindrical, length of palpal segments: 0.016–0.030, 0.023; 0.037–0.051, 0.043; 0.076–0.092, 0.085; 0.069–0.092, 0.097; 0.085–0.099, 0.091; setae dark brown, elongate, scattered. Inner vertical setae 0–2, 1; outer vertical setae 0–4, 2; frontal setae absent; postorbital setae 0–3, 1. Cibarial pump (Fig. 3) elongate, tapered ventrally, apex acute, 0.145–0.170, 0.159 long, 0.048–0.074, 0.060 wide, 2.2–3.2, 2.7 \times longer than wide. Tentorium (Fig. 3) 0.127–0.150, 0.141 long.

Thorax dark brown, subshiny; vittae indistinct, Anteprenotum in lateral view narrow, elongate, expanded ventrally; in dorsal view median fissure contiguous; anteprenotal setae absent. Acrostichial setae absent; dorsocentrals 5–12, 8; prealar setae 2–6, 4. Pleura pale brown, anepisternal and katepisternal setae absent. Halter pale yellowish brown to pale brown. Scutellum dark brown, subshiny, rounded posteriorly; scutellar setae 6–7, 6 in single transverse row.

Wing (Fig. 4) length (from arculus) 1.47–1.79, 1.68; 3.6 \times longer than wide. Membrane hyaline; microtrichia absent; brachiolar setae 1–2, 1; basal half of radius with 4–6, 5 setae; R_1 with 1 seta; veins pale yellowish brown. Costa ending anterior to apex of wing, distinctly distad to apex of R_{4+5} . R_{2+3} reaches costa 0.49–0.55, 0.53 of way between R, and R_{4+5} . Squama glabrous. WR 1.2–1.3, 1.3.



Figs. 1-7. *Smittia lasiops*. 1, Head. 2, Male flagellomeres 1-3, apex of flagellomere 13. 3, Cibarial pump and tentorium. 4, Male wing. 5, Male terminalia. 6, Female antenna. 7, Female terminalia.

Legs pale brown, concolor, linear. Tibial spur on foreleg 0.046–0.051, 0.048. Inner tibial spur on midleg 0.012–0.018, 0.015, outer tibial spur 0.018–0.028, 0.022. Inner tibial spur on hindleg 0.009–0.023, 0.015, outer tibial spur 0.041–0.054, 0.048. Empodium filiform, pale yellow. Pulvilli reduced, indistinct. Apical claws on tarsomere 5 fuscus, paired, simple. Lengths (in mm) and proportions of legs:

	fe	ti	ta ₁
P ₁	0.536–0.643, 0.604	0.673–0.826, 0.760	0.352–0.444, 0.393
P ₂	0.612–0.689, 0.656	0.536–0.719, 0.635	0.245–0.321, 0.292
P ₃	0.627–0.719, 0.689	0.673–0.796, 0.736	0.352–0.459, 0.424
	ta ₂	ta ₃	ta ₄
P ₁	0.199–0.245, 0.226	0.138–0.168, 0.158	0.077–0.107, 0.096
P ₂	0.153–0.184, 0.166	0.107–0.138, 0.119	0.061–0.077, 0.075
P ₃	0.184–0.245, 0.226	0.168–0.184, 0.177	0.077–0.092, 0.090
	ta ₅	LR	BV
P ₁	0.046–0.092, 0.081	0.46–0.57, 0.52	2.90–4.04, 3.23
P ₂	0.061–0.077, 0.073	0.40–0.54, 0.46	3.62–3.74, 3.65
P ₃	0.077–0.092, 0.086	0.52–0.62, 0.57	3.24–3.41, 3.26
	SV		
P ₁	3.13–3.81, 3.48		
P ₂	4.02–4.90, 4.40		
P ₃	3.21–3.71, 3.40		

Abdomen and terminalia (Fig. 5) dark brown; setae dark brown to fuscus, elongate, scattered. Anal point distinct, acute. Gonostylus broad, reflexed, apex truncate, length 0.08–0.10, 0.095; apical tooth thick, length 0.01. HR 1.7–1.9, 1.75.

Female.—Coronal triangle indistinct. Antenna (Fig. 6); scape 0.06–0.10, 0.08 long, 0.05–0.07, 0.06 wide, 1.1–1.6, 1.3× longer than wide; pedicel 0.06–0.07, 0.062 long, 0.07–0.08, 0.072 wide, 1.0–1.3, 1.2× wider than long; flagellomeres pilose, flagellomeres 1–5 with 2 broad hyaline blades, lengths 0.078–0.090, 0.084, flagellomere lengths: 0.066–0.072, 0.067; 0.048–0.060, 0.053; 0.060–0.072, 0.062; 0.060–0.072, 0.062; 0.090–0.114, 0.097. Clypeal setae 6–13, 8. Maxillary palpal lengths: 0.018–0.024, 0.023; 0.024–0.042, 0.032; 0.060–0.078, 0.067; 0.072–0.084, 0.076; 0.066–0.096, 0.079; setae pale brown. Inner vertical setae 2; outer vertical setae 1–2, 2; postorbital setae absent. Cibarial pump 0.108–0.162, 0.140 long, 0.054–0.066, 0.060 wide, 1.8–2.6, 2.3× longer than wide. Tentorium 0.108–0.138, 0.128 long.

Anteprenotal setae 3-4, 4; dorsocentrals 9-12, 11; prealars 3-4, 4; scutellar setae 5-7, 6.

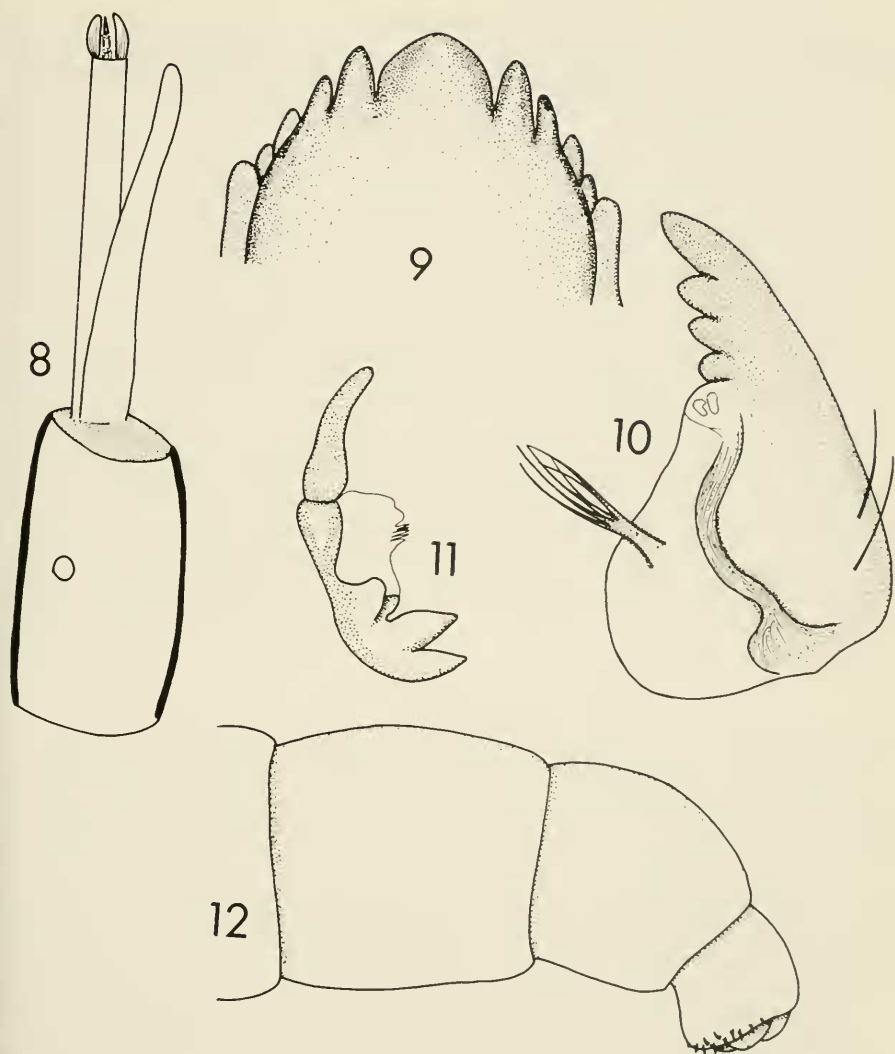
Wing length 1.42-1.64, 1.53, 2.7-3.7, 2.9× longer than wide. Brachiolar setae 2; setae on basal half of radius 10-13, 11; setae on R_1 7-8, 8; setae on R_{4+5} 13-18, 16. R_{2+3} lies alongside of R_1 , almost fused. VR 1.2-1.3, 1.26.

Length of tibial spur on foreleg 0.018-0.037, 0.029; length of inner spur on midleg 0.009-0.018, 0.014, outer spur 0.018-0.025, 0.022; length of inner spur on hindleg 0.012-0.016, 0.014, outer spur 0.051-0.046, 0.045. Lengths (in mm) and proportions of legs:

	Fe	Ti	Ta ₁
P ₁	0.413-0.536, 0.477	0.536-0.658, 0.594	0.260-0.306, 0.288
P ₂	0.474-0.612, 0.536	0.520-0.627, 0.557	0.214-0.275, 0.236
P ₃	0.581-0.643, 0.600	0.551-0.719, 0.624	0.321-0.428, 0.361
	Ta ₂	Ta ₃	Ta ₄
P ₁	0.122-0.184, 0.165	0.107-0.199, 0.135	0.077-0.077, 0.077
P ₂	0.107-0.138, 0.125	0.092-0.168, 0.113	0.061-0.077, 0.064
P ₃	0.153-0.199, 0.174	0.138-0.168, 0.147	0.061-0.077, 0.071
	Ta ₅	LR	BV
P ₁	0.061-0.077, 0.064	0.4-0.5, 0.48	2.6-3.3, 3.1
P ₂	0.046-0.061, 0.058	0.4-0.4, 0.40	3.0-4.0, 3.6
P ₃	0.061-0.077, 0.071	0.6-0.6, 0.60	3.2-4.0, 3.5
	SV		
P ₁	3.5-3.9, 3.7		
P ₂	4.4-4.8, 4.6		
P ₃	3.2-3.5, 3.4		

Abdomen and terminalia (Fig. 7) pale brown. gonopophysis VIII membranous, oblong. Gonocoxite IX with 4 setae. Rami of gonapophysis IX 0.207-0.248, 0.228 long. Cerci reduced, length 0.048-0.060, 0.054. Spermatheca oval, dark brown, length 0.081, width 0.044-0.048, 0.046, 1.8× longer than wide.

Pupa.—Length 2.4-3.0, 2.7 ($N = 3$). Exuvium pale yellow. Thoracic horn and cephalic tubercle absent. Precorneal setae 1-3 in short arc. Median anteprenotal setae 1. Dorsocentral, metanotal, prealar, supraalar, postorbital, and vertical setae absent. Wing sheath broad, apex rounded, nose and pearl row absent. Tergum I with fine spinules scattered across anterior half. Terga II-VIII with fine spinules across each entire tergum, generally coarser anteriorly on each tergum. Lateral and dorsal setae absent. Pedes spurii B



Figs. 8-12. *Smittia lasiops*, larva. 8, Antenna. 9, Mentum. 10, Mandible. 11, Premandible. 12, Abdominal segments 7-9.

and posterolateral tubercle on tergum VIII absent. Anal lobe without macrosetae or fringe of natatory setae.

Larva.—Head capsule dark yellow, body pale white. Length 4.2-4.6, 4.3 ± 0.07 ($N = 5$). Head capsule length 0.306-0.360, 0.322, width 0.246-

0.276, 0.263, 1.2× longer than wide. Postoccipital margin broadly rounded anteriorly, extending anteriorly 0.108–0.138, 0.121 from posterior margin of head. Antenna (Fig. 8), length of segments: 0.028–0.035, 0.031; 0.037–0.041, 0.039; 0.001; 0.002, AR = 0.74; width of basal segment 0.018, 1.6–1.9, 1.7× longer than wide, 0.7–0.9, 0.8× length of 2nd segment; distance from base to annular organ 0.012–0.018, 0.015; length of antennal blade 0.032–0.044, 0.039; lauterborn organs reduced at apex of 2nd segment, extend to apex of antennal segment 4. Mentum (Fig. 9), length 0.053–0.067, 0.061, width 0.104–0.113, 0.107, 1.6–2.0, 1.8× wider than long; anterior convex, median tooth broad, simple, 5 pairs of lateral teeth, descending in height from median tooth. Ventromental plate and setae absent. Mandible (Fig. 10) length 0.104–0.110, 0.107; width 0.053–0.064, 0.057; 1.7–2.0, 1.9× longer than wide; outer lateral broadly rounded, not crenulate; mediolateral margin smooth; apical tooth 0.5–0.6, 0.55× combined width of lateral teeth; setae subdentalis indistinct; setae interna reduced, branched; lateral setae 2. Pre-mandible (Fig. 11) bifid, length 0.053–0.064, 0.059; inner blade 1.0–1.5, 1.3× basal width of outer blade; premandibular brush absent. Setulae I dentate. Fore prolegs reduced, fused medially, claws simple. Procerci and posterior prolegs absent (Fig. 12). Anal gills reduced, 2 pairs, rounded apically. Posterior margin of abdominal segment 9 (Fig. 12) with numerous coarse, simple spinules.

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